

W. Heape

*Emigration, Migration
and Nomadism*

1946

* (原書 + 1926.7.23)
Heape 1931 (June, 1936 7.23)

nomadism:

def. emigration + ~~g~~ it

p. 321. but differs radically from it
in as much as the nomad normally
wanders over a definite territorial area

p. 322. The true nomad has no fixed
home

* Emigration, Migration and Nomadism
by Heape, W., 1931.

Cambridge

p. 16. A nomad is, strictly, one who lives a
roaming or wandering life, and if that be a
true definition of the word, then there are
two kinds of nomads, (a) those who roam
over a definite area or territory, and (b)
those who recognize no boundaries to their

wanderings.

As a matter of fact, it will, I think, be found that as a rule the great majority of nomadic peoples and nomadic animals roam only over a definite territory. ~~then~~ primarily

p.17 primarily nomads occupy a definite territory, and their home is the whole area of that territory, and they resent any encroachment encroachment upon it.

p.25...nomadic animals may wander irregularly over their territory, or they may conduct their wanderings in a systematic manner, visiting the whole of it in one year, in which case the ordering of their wandering is governed by the seasons, or they may take many years to cover the whole area, They may also, and commonly do, migrate for breeding purposes to special regions within their territory.

廣義 nomadism

p.26. ... it may, I think, be claimed that all species of animals capable of locomotion are nomads to some extent. Many ungulates for instance, wander over a definite area of country, constantly seeking change of pasture within that area; while they are followed by the animals which prey upon them. The same habit will be found to be practised by almost all species of animals. In fact, it is surely correct to say that all animals which are compelled to hunt for their food are nomadic, to some extent, from time to time, within boundaries beyond which they rarely stray.

nomadism → food = 生きるための食

p. 32¹ --- it is based on the necessity
to find ^{food} for sustenance of the life of the
individual; that is to say, it is essentially
an alimental movement, ---

p. 25 --- the nomadic habit, as practised to-day
amongst human beings, is usually consequent upon
the necessity, continually recurring, to find fresh
pasturage. The origin of this habit in man is
no doubt primeval. Surely it was an essential
characteristic when he roamed as a hunter in
search of food, and remained with him as
no less a necessity when he became possessed
of domesticated animals, and wandered with
them as shepherd, in search of food for
his flocks and herds.

migration of ~~the~~ ^{of} ~~the~~ ^{an} individual / ~~the~~ ^{the} ~~the~~ ^{an} ~~the~~
(~~the~~ ^{the} reproductive desire) ~~the~~ ^{the} social
+ ~~the~~ ^{the} ~~the~~ ^{the}, ~~the~~ ^{the} migration = immature
~~the~~ ^{the} ~~the~~ ^{the} ~~the~~ ^{the} ~~the~~ ^{the} ~~the~~ ^{the} ~~the~~ ^{the}.

* Chapman, Abel, 1924. The borders and beyond.

C. Coward, T. A. 1912. The migration of birds.

, 1926. The birds of the British Isles, vol. III.,
on migration of immature birds.

migration = ~~the~~ 社會性.

p. 209 : marshall, ~~the~~ =

-- as pointed out by Abel Chapman * (1924), adolescent birds accompany the mature ones on their migration northwards, though not necessarily going the whole way. The bar-tailed godwit takes three years to become mature, and the grey plover the same. The sanderling requires two years, if not three, and the knot, turnstone, oystercatcher and dunlin are similar. None of these birds breed until they assume the plumage of maturity, so it must be concluded that their migratory impulse is derived from association with the other birds. The first four of the above-mentioned birds are veritable "globe-spanners". On the other hand, as is well known for some species, non-breeding (that is, barren) birds (e.g., gulls) very usually do not migrate.

333 (herring) = $t + \frac{1}{2} \ln \frac{P_1}{P_2}$

Step. 266. It is of great interest to note that the herrings which frequent our seas are divided into what may be called separate tribes which apparently do not interbreed, since each tribe has its own particular breeding area. It is further of interest to find that separate shoals of each tribe are described as consisting solely of either adult breeding fish or of young immature fish; and that the latter, while they do not accompany the adult shoal to the breeding ground, follow it part of the way there.

As the young reach maturity they appear to be drafted into the adult shoal,

emigration (mass emigration)

Lemming (*Myodes lemmus*)

p. 96 --- All this big tract of country is the lemming's normal breeding ground, the species being split up into colonies, each of which apparently occupies well-defined territories.

p. 79

o lemming in local - lemming year + $\frac{3}{4} \pm 42$

o migrate $1 \pm 5 = \frac{101}{100}$, lemming / colony = $2 \pm 6 \frac{1}{2} \pm 4 \frac{1}{2}$
 $+ 1 \pm 2 \pm 7 \pm 2$.

∴ This is the only course they can take without infringing on their neighbour's rights, and it is only open to them because the area is not fit for habitation by the species.

p. 84. It is a mass movement, yet they are not sociable among themselves, their mental capacity is low, they are really individual wanderers who, from force of circumstances, wander in masses; it is not a voluntary concerted movement and in this respect differs from mass emigration of the springbuck described below.

ungulate

p. 102. From what I have learnt of other animals' habits I have long been of the opinion that antelopes, wherever they are found, as a rule live in communities which occupy a definite territory outside which they do not stray; and I find strong evidence in favour of this view from remarks casually made.

p. 103. ... except at long intervals when large hordes of them emigrated, and when they emigrated they, like the lemming, did not encroach upon territory already occupied by herds of their own species.

(black wildebeest, T19, trip = 2a)

p. 107 Andrews (1926)* says that the grass land antelope in Central Asia, Gazella gutturosa, while scattered in innumerable small herds during the non-breeding seasons collect together in thousands in special localities for parturition.

* On the Trail of Ancient Man.

(mass emigration)

butterfly migration 1 to 50

p. 159 There is undoubtedly a general tendency for animals in the northern hemisphere both to migrate and to emigrate northwards, and for animals in the southern hemisphere to journey southwards for such purposes.

" Amongst animals which travel on land it is, I think, undoubtedly the case that territorial rights affect the course of their movements; but in the case of winged insects I can find no evidence of any such hampering conditions; they can apparently go where they please.

$$42 \frac{3}{4} = 75 \text{ in } 1 + \text{ie}$$

p. 120. All breeders of stock know that after prolonged occupation of a definite area of pasture by a particular species of stock they cease to prosper on it. This is not due to scarcity of food, but to some deterioration in the quality of the food, so far as that particular species is concerned. Though there is an ample supply of food it is noticed that the young, especially, do not thrive on it; the old members of the herd also show clearly that something in the quality of the food is not suiting them, and I am satisfied that their breeding powers will suffer if they are kept on that land.

It is not clearly proved what causes such deterioration in the quality of the food. It is confidently supposed to be primarily due to the long continued deposition on the land of the dung and urine of the same species which lives on the herbage so manured; in which case the problem remains for bacteriologists and chemists to solve. However that may be,

reduced to a skeleton, but with a little rain
and a few short periods of stillness or calm
the grasses will grow again in the broken
ground & the same stock. This
will be a good basis on which to work on
the 1st of April the first crop of 150 acres
will be sown & intended to meet all the
diseases & losses from the winter & early
spring & will be ready to market by the 1st of
July & so forth. Thus the rotation will
be kept by every acre of the stock being
in pasture & land fit for that purpose. And it
will be the duty of each owner of a
house & garden to till his ground &
manure it & let it go to pasture. In this
way we can have a great deal of
land in pasture & each owner
will have a garden & the rest
of the land.

But further consideration will reveal
the necessity for common property. The
sheep owners will pay higher rates than
will meet the cost of sheep grazing.

Or land will quickly become fit to be planted
and crops grown on it. Hence if the owner of
stained land does not, the young grass, which
springs up quickly after rain, and good showers
of rain, will be soon worn away such stain
and the rich or hard soil & grasses remain
it may at once be put to stock, and no again
therefore. Similarly with meadows, or
stretches of land which are under water for
some months each year. Here the "washes"
in the low country never be out stained.

I suggest, therefore, that the gradual
emigrating movement of the people is brought about
by the results which lie over their long stretch
of a definite area in great numbers.

Feb 12 - 1902. 138

p. 25! At one time I had thought it possible that the desire for 'clean' and unoccupied land perhaps exerted influence on all migratory movements. All breeders know that land which has been continuously occupied by a species for a long time becomes 'stained', so far as that species are concerned. And adults cease to breed on it, and yet it has a deleterious effect on the health and power of growth of the young. I have always, however, been sceptical about this matter since, as mammals are concerned, we refer to the moose, the elk, the moose. But it is only true of cattle. It is quite true also for birds;

It is quite certain that animals themselves recognise the difference between clean land and land which has been rendered soiled by constant occupation by the same species. It is significant that occupation by different species distinguishes the ground, thus sheep may well object to the

or had which makes it difficult to
cattle to get along properly. But you
and I know, like, that he
has a disease or something of that
sort which makes him very bad
if asked to work and that makes
other animals run away from him
subject to starting and all that.

It does not seem to me that birds and dogs, such as we see
there, receive ten times what they do
in other places, especially in the winter
for several months and it is to be regretted
as a breeding ground after it has been
cleared by the long rains. The
trees grow so fast, however, that
Solanus dulcamara¹ grows fast and
single regularly changes its setting over
the hilly, uneven meadows.

* See also ^{See} *The golden larch*
Nature No. 2412, vol. LXXXI, 1890.

In the case of *Ammodramus humeralis*,
they also occur over a definite range
in winter and in the same season.
This much broad in a wider range, but
was probably not so far extended as the
winter range of *A. savannarum*, and it
may well be considerably less. The
breeding range of *A. savannarum* is

Log - of the expedition

Detracted by the number of the men
and supplies required to support the
expedition, the number of animals
available for pack purposes was not so
numerous as had been anticipated.
Hence the pack animals were
selected from the best available.

Log - of the expedition
The number of animals required to support
the expedition was considerably less
than originally anticipated, and the
number of pack animals was accordingly
selected from the best available.

Leviathan

the first and most important of the several
parts of his system, and it is the
most remarkable of his speculations,
as it is also the most difficult. The author
is at great pains to prove that the
universe is not only finite in extent,
but also in time; that it has had a
beginning, and will have an end; and
that it is the work of an intelligent
power, who created it, and who still
preserves it, and governs it.

Table of Contents

Page No. 2, 32 - *Introduction*.
In this page the author, after a short sketch of his life, gives a brief account of his present occupation, and of the principal features in his method of working.

Page No. 33 - *Geographical distribution of the species*.
This page contains a sketch of the geographical distribution of the species, and also a short account of the various localities where they have been found.

There are two or three important facts which a detailed knowledge of the species will enable us to determine, which may be of value in the geographical distribution of the species. These are the boundaries which may be drawn between the various species, and the localities in which they are to be found. As far as I have been able to ascertain, no such boundaries have been drawn, and the localities in which the species are to be found are not well known. It is therefore proposed to draw such boundaries as may be necessary, and to determine the localities in which the species are to be found, and to compare them with the areas of distribution of other species.

p. 7

Mr. Seton takes much interest in the species. They seem best known among all mammals over a very wide range of the country, and indeed their name is so well known as to give them great words do.

For, like the common opossum, they have a wide distribution, and are found in almost every state of the Union. But the same time we are enabled to notice the gradual right of way. Thus a general right is obviously due to all, but the right of first among certain species.

and attention to me was what he had to say
and then it was decided upon that I should make
a short speech to the people.

He said that particularly as he was
of the smaller party he would like to speak
about his conduct in the trial of the Boston
murder trial, and that he had done
what he could to get justice done. He said
that he had been a member of the committee
of the Boston bar to represent the State
in the trial of the Boston trial.

He said that he had been in Boston on the 21st of

December, 1859, when the trial of the Boston
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nesting of birds

p. 23 At the earliest the exclusiveness is not an exclusive characteristic of any one species or even of any species of animal; as a rule from time to time it will have an association with the allied species, especially during the non-breeding season, and most especially in winter quarters, not territorial claims to them also will suddenly disappear.

Such mutual tolerance is commonly manifested by the members of different species of the same genus. But not only so; it is frequently found that varieties or varieties of the same different species will live amicably together in neutral territory, where at the same time they have all here their own distinct and territory, which they will defend against inroads by strangers.

neutral territory in birds

p. 50 In birds there is almost always there is always the nest, the actual home place and nursery, and in most cases other places

birds of prey, besides the home territory they may at any time have recourse to feeding ground which is neutral territory, where many species collect, either singly, or in pairs, or in flocks, and behave perfectly amicably to one another. Here again there is evidence that friendly intercourse, even amongst birds of different species, is sought for.

neutral territory ≠ the other PR ≠ +?

p.55. Batten (1923)* says that small birds which live near the eyrie of a merlin appear to be immune from attack from him. Thus ring-o-sels, and starlings, though freely killed by the merlin in the open, remain unmolested by him while living and nesting next door to him. The exhibition of such trust by these smaller birds, of immunity from attack by a recognized enemy because of the proximity of their homes, must surely be associated with some law of neutral territory, or of the

acquisition of territorial rights which we do not understand.

* Batten, H.M. 1923. Inland Birds.

+ bird 1 territory = 25% E 90% Howard, H. Elliot /

'Territory in Bird Life' 1920.

'An Introduction to the Study of Bird Behavior' 1929. 7".

p.57

1 Howard = 25% Song + 75% female = 12.5% = ?

+ 12.5% territory + 12.5% food + 12.5% = ?

i.e. 1. territory + 12.5% ♂ & ♀ + 12.5% 25% 25% = ?

2. mate is in neutral territory = 12.5% food
+ 12.5% = 12.5% + 12.5% = ?

3. bird in territory + headquarter + 35% +
+ 12.5%. ip. A particular position on a
particular tree, shrub, gatepost, or high
up in the air over it, etc.

4. ↑ + 12.5% + 12.5% + 12.5% + 12.5% + 12.5%
= 12.5% + 12.5% + 12.5% + 12.5% + 12.5% = 12.5%
12.5% + 12.5% + 12.5% = 12.5% + 12.5% + 12.5% = 12.5%

Young, 1975

p. 127. just as a pair of foxes will drive their young away from home, so also single pairs of birds which occupy a definite territory only extensive enough for their own livelihood, drive away their young when old enough to fend for themselves, and compel them to make a home for themselves elsewhere. For instance, a pair of swans which occupy limited territory on a small sheet of water, drives the young away when they are old enough; and if they have learned their lesson, the old male treats them as he would any stranger who intrudes in his territory; he drives them away relentlessly and with ferocity.

The young have not no rights over territory held by their parents if it is not big enough to support them. Only in the case of gregarious animals which range over a wide territory are the young allowed to remain there; and in such cases, when the colony becomes too numerous, either the young are driven out of it when necessity arises, or, failing such anticipatory action, the colony grows far

beyond the capacity of the territory to support it, and mass emigration follows.

p.44 Amongst solitary breeding pairs of animals which occupy territory only big enough to support themselves, their young are necessarily driven away when they grow old enough to make a living for themselves. Young foxes, for instance, are not allowed to hunt over their parents' territory. Before they are fit for breeding they are turned adrift and live a solitary wandering life until they find a mate and make a home for themselves, during the next breeding season.

The recognition of territorial rights

p.24. The recognition of rights over a definite territory is one of the very first indications of the growth of civilisation in man. Where such rights are established, where ownership of territory is recognized, home life begins.

p.25. The more one studies the motives which determine the various movements of animals, the more one is impressed with the almost universally instinctive recognition of 'home', and the rights over home territory which they show and practice. It is indeed on this instinct that the claim for any degree of civilisation among animals must be based. Thus, it is of great interest to observe that in man, this instinct exhibited with increased strength, which is, in reality, the foundation upon which all his civilization is built up, is derived from identically the same instinct possessed by the lower animals, and both clearly recognized and almost universally respected by them.

mammal = 23 in 31 1/2

p. 211.

plain caribou jump ⁵出来 + 1 20 in =
The woodland caribou, in order to escape from pursuit by a wolf, for instance, must be able to leap over the fallen timber which constantly obstructs its path, and must do so without loss of speed. Long* has actually watched a company of woodland caribou cows with their calves, engaged in teaching the latter to jump over fallen timber.

*Long, William J. 1902. School of the woods.